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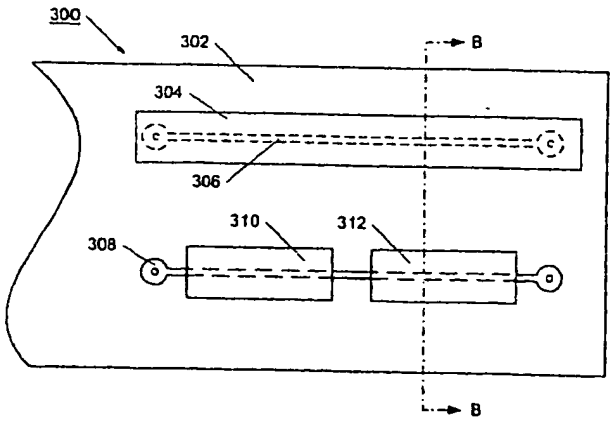
(54) Title: METHOD AND APPARATUS FOR ADJUSTING ELECTRICAL CHARACTERISTICS OF SIGNAL TRACES IN LAYERED CIRCUIT BOARDS



(57) Abstract: The electrical characteristics of a signal trace in a layered circuit board are modified by selectively modifying the dielectric constant and/or the magnetic permeability of an insulating material layer in the vicinity of a signal interconnect. The electrical characteristic is modified by adding a layer of different material into the circuit board layers either above or below the circuit board plane containing the trace. The different material could be any insulating material with a different dielectric and/or permeability constant. In one embodiment, during the circuit board lamination process, only a selected trace is covered with a layer of the different material, thus the electrical properties of other traces will not be affected. The layer of different material on the trace may cover the entire length of the trace, or it covers one or more parts of the trace, as the adjustment of the electrical properties requires. In another embodiment, the insulating material separating the trace from a reference plane is replaced with a different material in the vicinity of the selected trace. In still another embodiment, the insulating material separating the trace from the reference plane is modified to change its dielectric constant and/or magnetic permeability in the vicinity of the selected trace.

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